

**STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS
FOR THE MINNESOTA ENVIRONMENTAL QUALITY BOARD**

In the Matter of the Application by Lakefield
Junction LLP for a Certificate of Site
Compatibility for a Nominal 550 Megawatt
Simple Cycle Combustion Turbine
Generating Plant in Martin County.

**FINDINGS OF FACT,
CONCLUSIONS AND
RECOMMENDATION**

The above-entitled matter came on for evidentiary hearing before Administrative Law Judge Richard C. Luis at 1:30 p.m. and 7:00 p.m. on September 23, 1999 at the Trimont Municipal Building, in Trimont, Minnesota. The record closed on October 21, 1999.

Appearances: Charles K. Dayton, Attorney at Law, Leonard, Street and Deinard, P.A., 150 South Fifth Street, Suite 2300, Minneapolis, Minnesota 55402, appeared on behalf of Lakefield Junction LLP (Applicant, Company or Lakefield). Dwight Wagenius, Assistant Attorney General, 525 Park Street, Suite 500, St. Paul, Minnesota 55103, appeared on behalf of the Minnesota Environmental Quality Board (MEQB). Larry B. Hartman, Case Manager, and Robert Cupit, Public Advisor, 300 Centennial Building, 658 Cedar Street, St. Paul, Minnesota 55101, represented the MEQB staff.

Notice is hereby given that pursuant to Minnesota Statute § 14.61 and Minn. Rule 4405.0900, exceptions to this report, if any, by any party adversely affected must be filed within ten (10) days of the mailing date hereof with the Director of the Minnesota Environmental Quality Board, 658 Cedar Street, St. Paul, Minnesota 55155. Exceptions must be specific and stated and numbered separately. Proposed Findings of Fact, Conclusions and Order should be included, and copies thereof shall be served upon all parties.

The Minnesota Environmental Quality Board will make the final determination of the matter after the expiration of the period for filing exceptions as set forth above or after oral argument if such is requested and granted in this matter.

Further notice is hereby given that the Minnesota Environmental Quality Board may, at its own discretion, accept or reject the Administrative Law Judge's Recommendation and that said Recommendation has no legal effect unless expressly adopted by the Board as its final Order.

STATEMENT OF ISSUE

Should the Minnesota Environmental Quality Board issue a Certificate of Site Compatibility to Lakefield Junction LLP for its proposed location of an electrical generation facility and associated facilities in Martin County, Minnesota, and if so, which of the two sites under consideration should be approved as the location?

Based upon all the proceedings herein, the Administrative Law Judge makes the following:

FINDINGS OF FACT

A. PROCEDURAL HISTORY AND THE PARTIES

1. The Certificate of Site Compatibility Applicant, Lakefield Junction LLP, is a limited liability partnership between NRG Lakefield, Inc., and Tenaska Minnesota, Inc. NRG Lakefield, Inc. is a subsidiary of NRG Energy, Inc. ("NRG"). Tenaska Minnesota, Inc. is a subsidiary of Tenaska, Inc. ("Tenaska"). NRG is a wholly owned subsidiary of Northern States Power Company. The applicant intends to operate the plant as a "peaking" unit that sells power at wholesale to electric and municipal utilities, rural electric cooperatives (collectively "utilities"), and/or other wholesale buyers.

2. On February 24, 1999, Lakefield submitted an application for a Certificate of Site Compatibility to the Minnesota Environmental Quality Board (MEQB) to construct and operate an electrical generating facility. (MEQB Exhibit 1.)

3. At its March 18, 1999 meeting, the MEQB accepted the Lakefield Junction LLP application for the project and began the review process, and authorized the appointment of a Site Advisory Task Force. (MEQB Exhibit 3, 4.)

4. The MEQB approved the proposed scope for the Environmental Impact Assessment ("EIA") on the Lakefield Junction LLP Southern Minnesota Independent Power Project at its meeting of August 19, 1999. Since no additional sites were proposed, other than the preferred site and the alternate site put forward for consideration by the Applicant, only those sites were reviewed in the EIA. (MEQB Exhibit 11.)

5. The MEQB conducted a public information meeting in Trimont on April 15, 1999 on the proposed plant. The meeting was held at 7:30 p.m. in the Trimont Municipal Building pursuant to published notice. (MEQB Exhibit 5.)

6. On April 23, 1999, the MEQB appointed 17 persons as members of the Southern Minnesota Independent Power Project Site Advisory Task Force. (MEQB Exhibit 8.)

7. The Site Advisory Task Force met on May 4, 1999, May 11, 1999, and June 2, 1999. Each meeting was held in Trimont, Minnesota. (Task Force Exhibit 55.)

8. The Site Advisory Task Force completed its initial task (EIA Scope and Plant Site Proposals) on June 2, 1999. The Task Force made no additional site proposals. The Task Force identified specific topics to be included in the scope of the EIA. (MEQB Exhibit 11 at 2; [Task Force Exhibit 55](#).)

9. Notice of the contested case hearing on the application by Lakefield Junction for a Certificate of Site Compatibility for the 550 megawatt Lakefield Junction Generating Station was published on the dates shown below. The Notice of Availability of the Draft Environmental Impact Statement for the Lakefield Junction Generation Station and opportunity to comment was published at the same time and place. (MEQB Exhibits 19, 20.)

September 6, 1999	EQB Monitor
September 6, 1999	The Fairmont Sentinel
September 8, 1999	Truman Tribune
September 8, 1999	West Martin Weekly News
September 9, 1999	St. James Plain Dealer
September 9, 1999	Jackson County Pilot

All notices to public officials required by Minn. Stat. § 116C.58 were served by mail on September 3, 1999. (MEQB Ex. 22.)

10. On June 24, 1999, the Minnesota Public Utilities Commission ordered the issuance of a Certificate of Need (CON) for the proposed project. The Order Granting Certificate of Need was issued on June 30, 1999.

11. On July 18, 1999, a proposed scope for the Lakefield Junction Environmental Impact Assessment was furnished to members of the Site Advisory Task Force, for their review and comment. (MEQB Exhibit 10.)

12. At its meeting on August 25, 1999, the Site Advisory Task Force recommended that the Southern Minnesota Independent Power Project be constructed on either the Preferred Site (NE ¼ of Section 19) or the Alternate Site (SW ¼ of Section 20) in Cedar Township in Martin County, Minnesota. (Task Force Exhibit 55.)

13. On September 3, 1999, Notice of a Public Hearing on the application for the Certificate of Site Compatibility and Notice of the EIA availability was mailed to various governmental officials, members of the Site Advisory Task Force, members of the MEQB Technical Representatives Committee, members of the MEQB, and various libraries as required by statute and rule. (MEQB Exhibits 18, 19 and 20.)

B. GENERAL DESCRIPTION OF THE PLANT, THE TRANSMISSION INTERCONNECTION, AND THE PROPOSED LOCATION:

14. Lakefield is a limited liability partnership formed by NRG Lakefield, Inc. and Tenaska Minnesota, Inc. (See Application for Transmission Line Exemption, "Transmission App., at Fig. 1-1, MEQB Exhibit 1; Knudsen Direct at 4, Applicant's Exhibit 30.)

15. Lakefield proposes to build, own and operate an electric generating facility to be known as the Lakefield Junction Generating Station ("the Plant"). The Plant will be a nominal 550-megawatt (MW) simple-cycle combustion turbine generating plant. The plant will include six General Electric Frame 7 EA combustion turbine generators, each with a net nominal rating of about 92 MW at the plant site. The plant will include exhaust stacks, generator step-up transformers, a 345 kV switch yard, raw water storage tanks, demineralized water tanks, fuel oil storage tanks, evaporative air coolers, emergency startup diesel generation and an integrated control system for remote operation. Other facilities will include a water supply system, water treatment system, wastewater storage pond, and a wastewater spray irrigation system. (See Application for Certificate of Site Compatibility, "CSC App.," at 2, MEQB Exhibit 1 and Draft Environmental Impact Assessment, "EIA," at 1, MEQB Exhibit 14; Knudsen Direct at 2,3, Applicant's Exhibit 30.)

16. The Plant is proposed to be located ten miles west and north of the City of Trimont in Martin County in southern Minnesota. Lakefield has proposed two sites which are in close proximity to the intersection of the Northern Border Pipeline Company's ("Northern Border") high pressure natural gas pipeline and Northern States Power Company's (NSP) 345,000-volt (345 kV) high voltage transmission line. The Northern Border Pipeline (42-inch diameter with an operating pressure of 1,385 PSIG) will transport natural gas for the proposed Plant. NSP's 345 kV transmission line will provide the outlet for the electrical power generated at the plant. The proximity to this intersection is a key feature of the project, since it avoids the need for constructing long transmission line and gas pipeline interconnections. (See CSC App. at 1.2 and Appendix C, MEQB Exhibit 1, Lakefield Transmission Study and Fuel Project Strategies, pp. C-1, C-9, and EIA at 1, 4; Knudsen Direct at 2, Applicant's Exhibit 30.)

17. The purpose of the project is to provide a low-cost, dedicated source of capacity and energy to electric utilities, rural electric cooperatives and/or other wholesale buyers which will help to meet electricity needs during contingencies and peak consumption periods. (See EIA at 4, MEQB Exhibit 14; Transmission App. at Executive Summary; Knudsen Direct at 4, Applicant's Exhibit 30.)

18. Lakefield has proposed a "Preferred Plant Site" and an "Alternate Plant Site." The general location of the sites in relation to Trimont and Martin County are shown in Figure 1 of the EIA. (MEQB Exhibit 14.) Both sites are located in Cedar Township, the most northwestern township in Martin County. (EIA Fig. 1) The Preferred Plant Site is located in the NE $\frac{1}{4}$ of Section 19, Cedar Township, as shown in Figure 4 of the EIA. The Alternate Plant Site is located in the SW $\frac{1}{4}$ of Section 20,

Cedar Township, as shown in Figure 5 attached to the EIA. (Knudsen Direct at 4, Applicant's Exhibit 30.)

19. The plant is designed as a peaking plant, to sell capacity and energy primarily to local utilities and/or alternate service providers. No direct sales will be made at retail. As discussed more fully at page 68 in the Application for Certificate of Need, Lakefield Junction, LLP Southern Minnesota Independent Power Project ("CON App"), Lakefield will qualify as an Exempt Wholesale Generator ("EWG") under federal law. The actual usage of the plant is expected to be less than 20% based on historical usage patterns for other peaking facilities within the Midcontinent Area Power Pool (MAPP). (See EIA at 27, MEQB Exhibit 14; Knudsen Direct at 4,5, Applicant's Exhibit 30.)

20. Interconnection of the plant to NSP's existing Lakefield/Wilmarth 345 kV transmission line requires a switch yard and a short high voltage transmission line. For the Preferred Plant Site, less than one-half mile of 345 kV interconnection line will be necessary between the plant switch yard and the existing 345 kV transmission line. Approximately one mile of transmission line would be required to connect the plant site to the existing 345 kV transmission line if the Alternate Site is chosen. (Knudsen Direct at 5, Applicant's Exhibit 30; Cullison Direct at 7-8, Applicant's Exhibit 31.)

21. The Northern Border Pipeline is a major transmission facility moving large volumes of natural gas from Western Canada to the Ventura, Iowa trading hub, and further east to various markets (see CSC App. C-2, MEQB Exhibit 1). Due to the pipeline's enormous capacity to transport very large volumes of natural gas, and the further ability of numerous gas management companies to buy, sell and balance daily gas flows from this pipe, Northern Border is an appropriate pipeline to serve a peaking power plant, which will tend to have unpredictable fuel requirements. (Knudsen Direct at 6, Applicant's Exhibit 30.)

22. Locating this plant in south central Minnesota at the intersection of a NSP 345 kV line and the Northern Border Pipeline takes advantage of a location which is optimal, both electrically and geographically. (Ray Direct at 2,3, Applicant's Exhibit 35.)

23. NSP's 345 kV electric transmission line near the proposed Lakefield Junction Project is a part of NSP's regional interconnected high voltage bulk power transmission grid. It also serves as a regional reliability interconnection between the Twin Cities and the Omaha area. The primary purpose of this line is to provide NSP and neighboring utilities access to back-up power in the event of a sudden loss of generation or transmission. Normally there is minimal power flowing on that line other than that which feeds the lower voltage transmission lines in southern Minnesota from the Lakefield Junction substation, located about 18 miles from the project site. (CSC App. Appendix C-2, MEQB Exhibit 1; Knudsen Direct at 5, Applicant's Exhibit 30; Ray Direct at 2,3, Applicant's Exhibit 35.)

24. The proposed project would create a significant source of generation on a high capacity line relatively close to NSP's Twin Cities Metropolitan Area ("TCMA") loads. Most of NSP's electricity is generated from major generating plants located

either to the northwest or within the TCMA. During normal periods, NSP can serve the TCMA load reliably with its existing generating capacity. However, during periods of peak regional electrical demands, or when certain generators or transmission lines are out of service, a new generator located in south central Minnesota and having access to the west 345 kV transmission line will be able to support and back up electrical loads normally served by the existing generating capacity. The proposed location is an optimal site where land is available to build a natural gas fired generation project in close proximity to a major electric transmission line, a major natural gas transmission pipeline, and a major electric transmission substation. The proposed site is in an excellent location both geographically and electrically. (Ray Direct at 2,5, Applicant's Exhibit 35.)

25. The Lakefield Junction Generating Station Capacity Addition System Reliability Study was performed to determine advantages or disadvantages of the location of the proposed project from the perspective of transmission of electrical power, and the effects of the addition of the Lakefield Junction area power system improvements and the new generation unit on the MAPP bulk transmission system. The Report summarizes the results of a technical study performed to demonstrate that the proposed transmission improvements are sufficient to permit successful integration of the new LLP generation resource with the existing power system with no adverse effects on the MAPP bulk transmission system. System performance was investigated with all local generation at full output concurrent with high power transfers across Manitoba, North Dakota and Twin Cities export boundaries. The results of these analyses show the existing and proposed generation/transmission system is adequate to accommodate the necessary capacity addition of the Lakefield Generating Station during the summer of 2001. (CSC App. at Appendix C, MEQB Exhibit 1; Ray direct at 3,4, Applicant's Exhibit 35.)

26. The study has been submitted to and was accepted on August 18, 1999 by the Design Review Subcommittee of the Mid-Continent Area Power Pool ("MAPP"), which has allowed the interconnection of the Lakefield Junction generating station to NSP's 345kV transmission line on the conditions set forth in the study. (Ray Direct at 4, Applicant's Exhibit 35.)

C. DETAILED DESCRIPTION OF THE PLANT AND ASSOCIATED FACILITIES

27. For the power plant, which utilizes the same technology at both the Preferred and Alternate Plant Sites, the equipment required is as follows (Cullison Direct at 2-5, Applicant's Exhibit 31.):

- Six General Electric, dual fuel firing combustion turbines, Model PG7121 (Frame 7EA), each having a nominal rating of 92 MW at the Plant Sites. Each turbine is equipped with an evaporative cooler to cool the inlet air, which helps increase turbine power output. Each turbine is capable of being operated independently.

- Six electrical generators driven by the combustion turbines. The generators produce power at 13.8 kV.
- Three generator step-up transformers which receive the 13.8 kV power from the generators and step it up to 345 kV which is the voltage level of the nearby Northern States Power (NSP) transmission system.
- A 345 kV switch yard arranged in a three breaker ring bus configuration. The switch yard allows the power plant to be safely connected to or disconnected from NSP's 345 kV transmission line.
- A natural gas fuel system which receives gas from the nearby Northern Border Pipeline Company's 42-inch natural gas pipeline, treats it, meters it, and forwards it to each of the six combustion turbine generators.
- A fuel oil system consisting of a fuel oil unloading station, fuel oil storage tank(s) with combined capacity of 1.5 million gallons of very low sulfur No. 2 fuel oil, and a fuel oil forwarding system which provides fuel oil to each of the six combustion turbine generators.
- Six exhaust stacks each being 52 feet tall with cross section dimensions of 9 ft by 19ft. Each combustion turbine will have a single exhaust stack.
- A water treatment and storage system consisting of a raw water storage tank(s) with capacity of approximately 2 million gallons, raw water filters and a reverse osmosis (RO) unit to soften the raw water, an RO treated water storage tank with a capacity of approximately 300,000 gallons, a rented or leased demineralization system to further purify the RO treated water, and a demineralized water storage tank with a capacity of approximately 2 million gallons.
- A plant wastewater storage and treatment system consisting of plant sumps which collect water from plant process areas (areas which in general have machinery and equipment which contain or use oil), an oil/water separator which separates oil from wastewater collected in the plant sumps, a chemical waste sump which will facilitate the collection and neutralization of water from chemical area drains, a wastewater retention pond with a capacity of up to 20 million gallons (or two years of normal expected operation), and a wastewater spray irrigation system designed to apply up to 10 million gallons of wastewater per year on agricultural land. Provisions will be made to transfer wastewater from the wastewater retention pond to tanker trucks when spray irrigation is not feasible due to wet weather conditions. Sanitary wastewater from plant restrooms will be discharged to a septic system in conformance with local regulations.
- A storm water collection and drainage system for non-process areas of the plant consisting of ditches, culverts, catch basins and storm sewers as

required to collect storm water runoff and direct it to Judicial Ditch No. 91, which runs through and adjacent to both the Preferred and Alternative Plant Sites. Storm water from plant process areas will be routed to the oil/water separators where the oil will be removed and the discharge water will be directed to the wastewater retention pond.

- A “black start” diesel generator which will be capable of starting one combustion turbine generator in the event that power from the NSP 345 kV transmission system is unavailable at the time combustion turbine startup is required.
- A plant control system which will allow the power plant to be started, stopped, monitored and dispatched from either the plant control room or remotely when the plant is unmanned.
- Buildings consisting of an operations building containing the control room maintenance shop, warehouse and locker room; an auxiliary equipment building consisting of fire system pumps and water treatment equipment; a continuous emissions monitoring (CEM) building containing CEM equipment; a gas receiving building containing gas pressure regulators, meters and gas analysis equipment, and a fuel oil pump house building containing pumps to unload fuel oil from tanker trucks, pumps to forward oil to the combustion turbines, oil meters and a chemical storage area. (Cullison Direct at 2-5.)

D. NATURAL GAS PIPELINE INTERCONNECTION

28. The primary fuel, natural gas, will be transported by an existing Northern Border Pipeline Company (“Northern Border”) 42-inch underground pipeline. (CSC App. at 14, MEQB Exhibit 1.) Northern Border’s pipeline will be connected to the Plant through a short interconnection, which will be on property entirely owned by Lakefield, except that a crossing through County Road 103 right-of-way would be necessary if the preferred site is selected. The proposed gas interconnection routes are shown in the EIA, Figures 4 and 5, MEQB Exhibit 14. The interconnection will require a pipeline routing permit from the MEQB, which has been applied for. (See Application to Partially Exempt from Pipeline Routing the Construction of a Natural Gas Pipeline to Interconnect the Lakefield Junction Generating Station with the Northern Border Pipeline Company’s Interstate Pipeline in Cedar Township, Martin County, Minnesota, hereinafter “Pipeline App.” at Figs. 1-1 and 1-2, MEQB Exhibit 25.) The new pipeline interconnection for the Alternate Plant Site would be approximately ¼ mile in length. The pipeline interconnection for the Preferred Plant Site is approximately ¾ mile in length. (Pipeline App. at Figs. 1-1 and 1-2; MEQB Exhibit 25; Cullison Direct at a5-6, Applicant’s Exhibit 31.)

29. MAPP accreditation requires the plant to be capable of uninterrupted operation during periods when natural gas service is curtailed or interrupted. For backup fuel, No. 2 distillate fuel oil will be delivered to the plant by tank truck and stored

in a 1.5 million gallon on-site storage tank. The sulfur content of the distillate fuel oil will not exceed .05% by weight. (EIA at 19, MEQB Exhibit 21.) (Id.)

E. TRANSMISSION INTERCONNECTION

30. The transmission interconnection to connect the power plant to the existing NSP 345 kV Lakefield-Wilmarth transmission line is the subject of an application for an exemption from the Power Plant Siting Act process (Application to Exempt from the Act the Construction of a High Voltage Transmission Line to Interconnect the Lakefield Junction Generating Station with the Lakefield-Wilmarth 345 kV Transmission Line in Cedar Township, Martin County, Minnesota) (hereinafter "Transmission App."). The plant switch yard will be located adjacent to whichever site is ultimately developed for the power plant. The existing 345 kV line will be cut and additional transmission line will be added such that the path of the 345 kV line is re-routed into and out of the new plant switch yard. The re-routing will require the installation of a new dead-end structure designed to support the additional load caused by the transmission line when it makes a 90° turn into the new switch yard and for when the transmission line makes a second 90° turn after it leaves the switch yard and intersects with the path of the existing transmission line.

31. A second dead-end structure will be required at the switch yard. These dead-end structures will be tubular steel poles approximately 110 feet in height with four crossarms (the longest being approximately 40 feet) designed to reposition the conductors (wires) from a horizontal configuration into a vertical configuration. The wires will remain in the vertical configuration until they reach the switch yard, where they are reconfigured at the second dead-end structure. For the Preferred Plant Site, the existing transmission line is approximately 1900 feet from the switch yard requiring three intermediate support structures spaced at intervals of up to 600 feet. No road crossings are required for the Preferred Plant Route. For the Alternative Plant Site, the existing transmission line is approximately 4500 feet from the switch yard requiring six intermediate support structures spaced at 600 feet. The intermediate support structures will be tubular steel poles approximately 120 feet in height with four cross-arms, the longest being approximately 40 feet. (Cullison Direct at 6-7, Applicant's Exhibit 31.)

32. The Alternative Project Route for the transmission interconnection will require crossing Martin County Highway 103. This crossing will be overhead and will not require the setting of towers within the right-of-way. (Id.) The estimated cost of the transmission line interconnection for the Preferred Plant Site is \$550,000, and for the Alternate Plant Site is \$800,000. (Exemption App. at 9-10, MEQB Exhibit 14; Cullison Direct at 8, Applicant's Exhibit 31.) Lakefield has applied for a conditional use permit and for an exemption from the power plant siting process for this transmission interconnection, and for a variance from zoning set-back requirements from Martin County. (Cullison Direct at 7,8, Applicant's Exhibit 31.)

F. RAW WATER SUPPLY

33. The major sources of raw water demands of the power plant and the volume of water which may be required to operate the plant are as follows:

- a) Water injection into the combustion chambers to increase power output. This will be infrequent and will occur only when the combustion turbines are operating in "power augmentation" mode. (See EIA at 17-18, MEQB Exhibit 21.)
- b) Water injection into the combustion chambers for control of NO_x (nitrogen oxides) when using fuel oil.
- c) Evaporative air cooling to lower the combustion turbine inlet air temperature when the ambient air temperature is above 60° F. (CSC App. at 15-16, MEQB Exhibit 1; EIA at 20, 21, MEQB Exhibit 21.) Lowering the combustion turbine inlet air temperature increases the power output of the combustion turbine generator. (Cullison Direct at 8-9, Applicant's Exhibit 31.)

34. The ability to secure a water supply at a rate of 200 gallons per minute for a period of seven (7) consecutive days will be sufficient to meet MAPP certification requirements and for plant operational purposes. While the instantaneous usage of water may be greater than 200 gallons per minute for periods of time, the on-site storage of water in several tanks will accommodate project water demands. (Cullison Direct at 9, Applicant's Exhibits 31, 56.)

35. The City of Trimont's existing well field can produce a flow of 200 gallons per minute for an indefinite period without adversely affecting other groundwater users. This Finding is based upon the review of the testing of the existing well field conducted by Liesch Associates, Inc. and reported in a memorandum of October 29, 1998, attached as Appendix D to the CSC Application. It is also based upon a letter from the Mayor of Trimont, Kevin Kuehl, dated September 8, 1999, and a memorandum from the Senior Hydrologist at Liesch Associates, Inc., Mr. Jim de Lambert, dated September 8, 1999 (submitted with testimony of Ray Wuolo, Applicant's Exhibit 32), which conclude that the City has a proven water supply of at least 200 gpm for use by the Project without adversely affecting the City's ability to meet current water needs or other groundwater users. (Wuolo Direct at 2,3, Applicant's Exhibit 32.)

36. The length of the water pipeline will be about 10 miles, and the diameter would be 6-12 inches. (EIA at 21, Fig. 6, MEQB Exhibit 21.)

37. The Trimont existing well field is a proven source of raw water sufficient to operate the plant without adverse effects on other users of groundwater in the area. (Wuolo Direct at 2,3, Applicant's Exhibit 32.)

38. While the existing Trimont well field can provide the minimum flow of water necessary to meet MAPP accreditation requirements and to supply the minimum demands of the plant, additional raw water sources are being studied. An additional well, CW-5, has been developed and tested in the Trimont well field which could

produce a greater supply of water. Results of this testing of Well CW-5 have determined that this additional well at Trimont could be pumped at a rate of 600 gpm, assuming a recovery period of up to 5 days each 8 weeks, without adverse effects on other groundwater users. After each six-month period of pumping, Well CW-5 could be pumped continuously for 30 days at a rate of 200 gallons per minute. This cycle could be repeated indefinitely with no adverse effect on the aquifer. (Second Supp. Statement of Ray Wuolo.) A 600 gpm water supply would give the plant additional operating flexibility, but is not necessary for a fully functioning generating plant. (Cullison Testimony, Tr. p. 59, line 6-8; Wuolo Direct at 3, Applicant's Exhibit 32; Cullison Direct at 9, Applicant's Exhibits 31, 56.)

39. In addition, the Red Rock Rural Water System, in conjunction with the City of St. James's water system, provides another potential source of raw water. (Cullison Direct at 9, Applicant's Exhibit 31.)

G. GENERATION AND TREATMENT OF WASTEWATER.

40. Because the combustion turbines require high quality water for inlet air evaporative cooling and power augmentation, a multi-stage treatment process will be employed for treating raw water stored at the site for use in the generating system. First, water will be filtered and a reverse osmosis (RO) unit employed to soften the water. This may take place on the project site or at the source of supply. Reverse osmosis produces a wastewater stream which constitutes 25-30% of the raw water brought into the plant. (EIA at 21, 22, MEQB Exhibit 21.) Secondly, truck-mounted or portable demineralizers will be used to further purify RO product raw water through a resin bed. The truck-mounted demineralizers will be regenerated at an off-site facility. (Cullison Direct at 9, 10, Applicant's Exhibit 31.)

41. Annual wastewater production generated by the plant is estimated to be in the range of 0.2 million gallons per year (Mgy) to 19.5 Mgy. Typically, annual wastewater production is estimated a 9.6 Mgy if the source is the Trimont well field. (Cullison Direct at 10, Applicant's Exhibit 31; Nutter Direct at 2, Applicant's Exhibit 33.) St. James raw water would produce an estimated average annual volume of 6.4 Mgy. (CSC App. at 17, 18, MEQB Exhibit 1; Cullison Direct at 10, Applicant's Exhibit 31.)

42. Land treatment by spray irrigation will be the normal means of wastewater disposal. Wastewater will first be directed to a 20 million-gallon wastewater retention pond with capacity to retain wastewater from two years of normal operation or one year of maximum expected flow of operation. (EIA at 22, 23, MEQB Exhibit 1; Cullison Direct at 10, Applicant's Exhibit 31; Nutter Direct at 5, Applicant's Exhibit 33.)

43. An extensive analysis of the suitability of spray irrigation for management of the wastewater has been completed. (Nutter Direct at 2, Applicant's Exhibit 33; EIA, Appendix B, MEQB Exhibit 1.) The operation of the irrigation system will not result in runoff (overland flow) of irrigated water leaving the site. Land treatment of a typical operating year (9.6 million gallons) would require a spray field of 36 acres. About 26 acres of the preferred site and 53 acres of the alternate site are classified as both

“primary suitable” for the land treatment of project wastewater. An additional 85 acres on the preferred site and 52 acres on the alternate site are classified as “secondary suitable.” (EIA at 26, Fig. 8, MEQB Exhibit 21; Cullison Direct at 10, 11, Applicant’s Exhibit 31.)

44. The wastewater will be derived from groundwater supplied from regional domestic supply systems. The wastewater will consist primarily of groundwater concentrated by reverse osmosis (RO) and filter backwash. It will not contain substances not in groundwater except minor amounts of non-toxic cleaning agents and water conditioning chemicals. (Nutter Direct at 2, Applicant’s Exhibit 33.)

45. A number of field studies were conducted to develop design criteria for a wastewater spray irrigation system and included soil types and physical characteristics, soil permeability, soil chemical properties, description of surface topography, geologic characteristics including depth to groundwater aquifers, location and type of subsurface drainage systems, and other site observations. A copy of the Wastewater Land Treatment Design Criteria Report (hereinafter “Design Criteria Report”) prepared by Nutter, Overcash & Associates, Inc. describing the studies and their conclusions is attached to the Draft EIA as Appendix B. (MEQB Exhibit 21; Nutter Direct at 2, Applicant’s Exhibit 33.)

46. The natural environment found at the sites, including existing rainfall, soils and geology, are typical of the region with undulating topography and undefined surface drainage except along roads. The sites have been under agricultural management for many years and crops grown are typical to the area. Soils are underlain by ground moraine glacial till which may contain lenses of sand or gravel. Underlying the till at 200 to 270 feet depth is shale. At the sites a water table aquifer occurs near the surface and a confined aquifer occurs at greater than 200 feet with water rising in an observation well to about 100 feet below the surface. Soils have a clay to loamy texture and those in low-lying areas remain wet for long periods of the year and are therefore not suitable for spray irrigation. Annual precipitation averages 29 inches, of which about 75% typically falls from April through September. Annual potential evapotranspiration averages 24 inches, principally in the summer months, resulting on average in a water deficit during the months of June through September. (Nutter Direct at 3, Applicant’s Exhibit 33.)

47. The soils classified as suitable for spray irrigation have an adequate permeability both at the surface and deeper within the profile for irrigated wastewater to move into the soil and be treated by the physical, chemical, and biological processes that occur in the soil. (Nutter Direct at 4, Applicant’s Exhibit 33.)

48. The wastewater consists primarily of concentrated groundwater. It will be low in metals and the primary plant nutrients nitrogen and phosphorus and relatively high in calcium, potassium, sodium, and magnesium. (Id.)

49. The spray irrigation system would operate in the same manner whether the plant is located on the Preferred Plant Site or the Alternate Plant Site. The Alternate

Plant Site has more suitable area for spray irrigation, based on soils and topography. Thus, most of the irrigation with wastewater from the plant would occur on the Alternate Plant Site. Wastewater storage could occur on either site. Areas suitable for irrigation are quantified at Table 10 and are shown in Figure 6 of the Design Criteria Report. (Id.)

50. The characteristic limiting irrigation on each site is the amount of suitable area. Suitable areas were determined from site-specific studies and included soil properties and topography. (Id.)

51. There is sufficient suitable area available between the two sites, in combination, to utilize the maximum annual expected wastewater for irrigation purposes, if that volume were to be produced. (Nutter Direct at 5, Applicant's Exhibit 33.)

52. The storage pond will have a capacity equivalent to two years of average expected flow or one year of maximum expected flow. Under most circumstances if wastewater was not irrigated due to unusual climatic conditions, it would be stored and irrigated at a later time within the criteria established for the amount and timing of irrigation. If water in storage exceeds the site's irrigation capacity, the excess storage will be hauled from the site by tank trucks to an approved waste treatment facility. (Nutter Direct at 5, 6, Applicant's Exhibit 33; Cullison Direct at 10, Applicant's Exhibit 31.) The City of New Ulm has indicated that it has the capacity to receive the plant's wastewater for at least the next 10 years. (Memorandum of John Lee to Randy Cullison, October 6, 1998.) The Metropolitan Council Environmental Services' (MCES) Disposal Site #1 in St. Paul could receive the wastewater generated by the plant, subject to a variance for water generated outside the metropolitan area and actual sampling of the wastewater.

53. Irrigation normally will occur in the spring after crops have been established and through the summer, typically from June through September. However, if a dry spring or fall occurs, irrigation may start earlier than June and/or continue later than September. Irrigation will not occur when the soils are saturated to the surface and there is a risk that runoff (overland flow) of irrigated wastewater could occur. Irrigation will not occur on frozen soils. (Nutter Direct at 5, Applicant's Exhibit 33.)

54. A portion of concentrated mineral salts will accumulate in the soil during the irrigation season. These salts will move through the soil during the non-irrigation season to beneath the crop root zone as rainfall and snowmelt occurs. (Id.)

55. There will be no adverse impact from the spray irrigation system on local water regimes, including storm water runoff and drainage ditches. Irrigation will occur only when it can infiltrate the soil surface. Storm water runoff from the site resulting from heavy rainfall and snowmelt will move from the site in the same manner as before the irrigation system was put in place. Some of the irrigated water will move through the soil to the drainage ditches. These flows will not coincide with storm water runoff events because no irrigation will take place at such times. Because most of the irrigation will occur when soils of the region have a high water storage capacity due to crop water use

and evapotranspiration, the timing of movement of irrigation water to the ditches will not coincide with the natural events. (Nutter Direct at 6, Applicant's Exhibit 33.)

56. There will be no adverse impacts to soils, groundwater, or agriculture as a result of the operation of the spray irrigation system. (Id.) The irrigated wastewater contains in concentrated form the same minerals contained in the soil and groundwater. Because some mineral salts may accumulate in the soil during the crop-growing season, a salt tolerant crop will be grown. A reduction in crop yield is not expected except in the driest of summers when there is not sufficient rainfall to move some of the minerals beneath the crop root zone. Potential impacts are discussed in greater detail in the Design Criteria Report. (Nutter Direct at 6, Applicant's Exhibit 33.)

H. ENVIRONMENTAL AND SOCIOECONOMIC IMPACTS REQUIRED TO BE CONSIDERED BY NEW LAW

Applicable Statutory and Rule Considerations

57. Minn. Stat. § 116C.57, subd. 4 provides that the MEQB shall be guided by the following responsibilities, procedures, and considerations:

- a) Evaluation of research and investigations relating to the effects on land, water and air resources of large electric power generating plants and high voltage transmission line routes and the effects of water and air discharges and electric fields resulting from such facilities on public health and welfare, vegetation, animals, materials and aesthetic values, including base line studies, predictive modeling, and monitoring of the water and air mass at proposed and operating sites and routes, evaluation of new or improved methods for minimizing adverse impacts of water and air discharges and other matters pertaining to the effects of power plants on the water and air environment;
- b) Environmental evaluation of sites and routes proposed for future development and expansion and their relationship to the land, water, air and human resources of the state;
- c) Evaluation of the effects of new electric power generation and transmission technologies and systems related to power plants designed to minimize adverse environmental effects;
- d) Evaluation of the potential for beneficial uses of waste energy from proposed large electric power generating plants;
- e) Analysis of the direct and indirect economic impact of proposed sites and routes including, but not limited to, productive agricultural land lost or impaired;

- f) Evaluation of adverse direct and indirect environmental effects which cannot be avoided should the proposed site and route be accepted;
- g) Evaluation of alternatives to the applicant's proposed site or route proposed pursuant to subdivisions 1 and 2;
- h) Evaluation of potential routes which would use or parallel existing railroad and highway rights-of-way.
- i) Evaluation of governmental survey lines and other natural division lines of agricultural land so as to minimize interference with agricultural operations;
- j) Evaluation of the future needs for additional high voltage transmission lines in the same general area as any proposed route, and the advisability of ordering the construction of structures capable of expansion in transmission capacity through multiple circuiting or design modification;
- k) Evaluation of irreversible and irretrievable commitments of resources should the proposed site or route be approved;
- l) Where appropriate, consideration of problems raised by other state and federal agencies and local entities;
- m) If the board's rules are substantially similar to existing rules and regulations of a federal agency to which the utility in the state is subject, the federal rules and regulations shall be applied by the board; and;
- n) No site or route shall be designated which violates state agency rules.

The application and the Final Environmental Impact Assessment contain adequate information to allow the MEQB to consider these factors.

Site Considerations

58. Minn. Rule 4400.3310 requires that the MEQB be guided by specified siting considerations. Each specific consideration will be assessed in the following Findings.

Effects on Human Settlement

59. Minn. Rule 4400.3310, subp. 1A requires that the MEQB must consider the effects of the proposed sites on human settlement, including but not limited to, displacement, noise, aesthetics, community benefits, cultural values, recreation, and

public services. For most of these elements, the two sites are equal. However, with regard to the aesthetics of the transmission interconnection, the preferred site will have less impact than the alternate site.

Human Settlement.

60. In general, the effects on human settlement are very limited due to the prudent selection of plant components and potential project sites, and attention to the details of plant and transmission line layout on those sites. Neither site has any occupied residences. Therefore, no population displacement or adverse impacts on housing will occur as a direct result of project construction and operation. (CSC App. at pp. 32 and 49; EIA at K.1; Idzorek Direct at 2.)

Aesthetics.

61. The proposed sites are visually dominated by agricultural land uses, particularly corn and soybean production. The Plant and transmission interconnection will be visible from most nearby visual receptors. The visual impact of the Plant will be minimized through the use of appropriate landscaping, site maintenance, and downward and inward pointing of security lighting. Transmission line interconnection appearance will be reduced by minimizing the physical length of the interconnection, using monopole support structures, and by applying background-neutral surface finishes. (CSC App. at pp. 35, 50, and 65, MEQB Exhibit 1; HVTL Exemption Request at pg. 13, MEQB Exhibit 14; EIA at M and P.2, MEQB Exhibit 21; Idzorek Direct at 2, 3, Applicant's Exhibit 34.)

Noise

62. Noise impacts due to Plant operation at either site are substantially the same, and the impacts are well within MPCA noise standards. Noise impacts due to the transmission line will be minimal and are not expected to differ from the impacts already being experienced due to the existing transmission line. (CSC App. at pp. 33, 49, and 65, MEQB Exhibit 1; HVTL Exemption Request at pg. 12, MEQB Exhibit 14; EIA at J and P.1, MEQB Exhibit 21; Idzorek Direct at 3, Applicant's Exhibit 34; Brownlow Direct at 6, 7, Applicant's Exhibit 36.)

Traffic Impacts During Both Construction and Operation.

63. Traffic volumes will increase during construction due to the movement of materials and workers to the project site. Some temporary, localized traffic delays and disruption may occur for short periods during construction. Operation of the project is not expected to produce a noticeable impact because of the infrequent need for maintenance and the very small permanent work force associated with the Plant. (CSC App. at pg. 53, MEQB Exhibit 1; EIA at L, MEQB Exhibit 21; Idzorek Direct at 3, Applicant's Exhibit 34.)

Community Benefits to be Expected from the Proposed Plant and Transmission Line Interconnection.

64. A number of benefits to the immediate area and beyond have been identified, including temporary and permanent job creation, additional property tax revenues directly attributable to the project, infrastructure improvements including the paving of County Highway 103, and the addition of clean, efficient, and reliable generating capacity to the regional electric supply system. (CSC Application at pp. 3 and 52, MEQB Exhibit 1; EIA at K, MEQB Exhibit 21; CON Findings at pg. 16; Idzorek Direct at 4, Applicant's Exhibit 34.)

65. Historically, Minnesota utilities have maintained low electric rates relative to other regions of the U.S. As a result, the state has been able to attract industrial concerns and maintain steady economic growth. The Project will allow the state and region to maintain favorable rates by helping Minnesota's utilities meet the region's immediate and future energy needs through use of appropriately planned and sited power plants. (Knudsen Direct at 7, Applicant's Exhibit 30.)

66. The estimated construction work force needed for construction of the project will include high-skilled, high-paying jobs such as welder, pipefitter, boilermaker, and insulator, as well as carpenter, electrician and other trades. Lakefield estimates that this Project will infuse an estimated \$9 million in payroll into the regional economy during the construction phase. The Project is expected to require up to three full-time equivalent positions to operate the Project, which will result in additional tax revenues paid to the State of Minnesota and Martin County. (Knudsen Direct at 7, Applicant's Exhibit 30.)

67. In addition to the contribution of a minimum of \$575,000 in real property taxes for Martin County and the local school district (Martin County West) each year for the next 20 years, the State of Minnesota and Martin County will also receive income and sales taxes from the construction of the Project. (Knudsen Direct at 7,8, Applicant's Exhibit 30.)

Cultural Values, Archeological and Historic Resources.

68. There are no significant cultural resources associated with either site. Review of the proposed Project sites by the Minnesota Historical Society State Historic Preservation Office identified no properties listed on the National or State Registers of Historical Places, and no known or suspected archaeological properties. (CSC App. at pg. 3, MEQB Exhibit 1; HVTL Exemption Request at pg. 13, MEQB Exhibit 14; EIA at F, MEQB Exhibit 21; Idzorek Direct at 4, Applicant's Exhibit 34.)

Recreation.

69. No significant recreational resource exists on or immediately adjacent to either of the proposed sites. There should be no adverse impact on any recreational opportunities in the township or the County, except for a reduction in the possibility of hunting on the project site. (CSC App. at pp. 3, 35, and 51, MEQB Exhibit 1; HVTL Exemption Request at pg. 13, MEQB Exhibit 14; Idzorek Direct at 4, Applicant's Exhibit 34.)

Public Services

70. The effects on public services will be beneficial as opposed to adverse insofar as the project will provide an additional water supply to the local fire department, provide additional generating capacity to the region, result in pavement of a section of County Highway 103, and possibly stimulate the expansion of the rural water system. Onsite management of wastewater will place no additional burden on municipal treatment works. (CSC App. at pg. 3, 36, 51, and 61, MEQB Exhibit 1; HVTL Exemption Request at pg. 13, MEQB Exhibit 14; EIA at K.2, MEQB Exhibit 21; Idzorek Direct at 4, 5, Applicant's Exhibit 34.)

Health and Safety.

71. The project will not have measurable impacts on public health and safety because emissions will be minimized through the use of clean fuels. Although traffic volumes will increase during the construction phase, additional traffic volumes during normal operation attributable to the Project will be trivial. (Idzorek Direct at 5, Applicant's Exhibit 34.) Construction of a bituminous surface on County Road 103 by Martin County will be conducted, after consultation with the affected farmers, in a manner to minimize any problems for farming operations. (Letter of Robert Witty, Martin County Engineer, September 28, 1999, to Eldon W. Olson.)

72. The issue of electric and magnetic field (EMF) exposure has been examined. The Project will not measurably increase exposures above current levels. (CSC App. at pg. 3, 36, 47, 53, and 61, MEQB Exhibit 1; HVTL Exemption Request at pg. 13, MEQB Exhibit 14; EIA at 44, MEQB Exhibit 21; Memorandum of John Hynes, MEQB Exhibit 23; NIEHS Report on Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields, MEQB Exhibit 24.) (Id.) The frequency and intensity of electrical shock beneath the existing 345 kV line will not change as a result of the addition of electrical power generated by the plant. The electric field which produces such shocks (which are similar to shocks received from a metal doorknob after walking across a carpet) result from voltage, which will not change. (Letter of Steve LaCasse to Randy Cullison, October 5, 1999.) The magnetic field (EMF) is proportional to current flowing on the line, so additional current may cause EMF levels to rise more frequently, but the levels already occurring on the line will not be exceeded. (Id.)

Land-Based Economies, Including Agriculture, Forestry, Tourism and Mining

73. No significant effects on land-based economies are expected because the Project will remove less than 100 acres of agricultural land from that use. No other economic loss would be attributed to this conversion of land use. The construction of the Project will have a temporary beneficial effect on economic activity due to the presence of the increased work force. Operation of the Project will have minimal impacts on private sector enterprises due to the small work force involved and the

minimal maintenance requirements for the Project. Public sector activity will benefit from the increase in property tax revenue. (CSC App. at pg. 3, 38, 47, 55, and 62, MEQB Exhibit 1; HVTL Exemption Request at pg. 14, MEQB Exhibit 14; Idzorek Direct at 5, 6, Applicant's Exhibit 34.)

Effects of The Project on the Natural Environment

74. Water will be obtained from groundwater sources that are not expected to influence surface water features that may support aquatic resources. (EIA at N.2, MEQB Exhibit 21.) There will be no direct discharge of stormwater to streams or rivers from the Project. Storm water runoff from the Project areas will continue to enter the Judicial Ditches that currently provide surface runoff outlets from the proposed Project. The stormwater management practices will ensure that no significant changes to the quantity and quality of the water discharging to these surface waters from the Judicial Ditches will occur as a result of the Project. (EIA at B.8, MEQB Exhibit 21; Idzorek Direct at 6, Applicant's Exhibit 34.)

75. Spray irrigation to agricultural lands adjacent to the proposed Plant will be used to manage wastewater generated as the result of water treatment processes, evaporative cooler blowdown, and plant service water discharges. A key operating constraint to the spray irrigation operation will be that no application of wastewater will occur such that ponding or surface runoff of the applied wastewater will occur. This operating constraint will minimize the potential for impacts from the wastewater management practices to area aquatic resources. (EIA at B.6, MEQB Exhibit 21; Nutter Direct at 5, Applicant's Exhibit 33; Idzorek Direct at 6, Applicant's Exhibit 34.)

76. The loss of crops and herbaceous plants on the proposed Project sites would displace the limited amount of wildlife that may inhabit these areas. However, an abundant amount of similar type habitat exists in the surrounding area, so it is not anticipated that the overall carrying capacity of the region would be significantly impacted. The conversion of some cropland to a spray irrigation field may have a beneficial wildlife impact, especially if the irrigated crop is alfalfa or a similar permanent cover crop. The wastewater spray irrigation holding pond may prove attractive to waterfowl, thereby potentially increasing the habitat value of the site in comparison with the drained and cultivated soils. (EIA at B.2, MEQB Exhibit 21; Idzorek Direct at 6, 7, Applicant's Exhibit 34.)

77. Vegetation will be completely removed or disturbed from less than 100 acres of the proposed Project sites. From a biological standpoint, the reduction in the number of corn or soybean plants is not a significant environmental impact. An extensive amount of similar vegetation exists in the areas surrounding the proposed Project sites. (EIA at E.4, MEQB Exhibit 21; Idzorek Direct at 7, Applicant's Exhibit 34.)

Effect on Rare and Unique Natural Resources

78. Based on the review conducted by the Natural Heritage and Non-game Research Program of the Minnesota Department of Natural Resources, the Project is

not expected to impact any rare or unique plant or animal species. (CSC App. at Appendix F, MEQB Exhibit 1; Idzorek Direct at 7, Applicant's Exhibit 34.)

Cumulative Present and Future Demands of the Project on Air and Water Resources

79. The Project sites are in attainment for all air pollutants and operation of the Plant will be in accordance with requirements to maintain the "attainment" classification for ambient air quality. The impacts to ambient air quality are based on preliminary modeling using EPA-approved dispersion models (ISCST3) and manufacturer's emissions data. Air quality impacts have been shown to be below the Potential for Significant Deterioration (PSD) significance levels for all pertinent air pollutants. (EIA at D.1, MEQB Exhibit 21; Table 2 as revised, Applicant's Exhibit 58; Idzorek Direct at 7, 8, Applicant's Exhibit 34).

80. The Project will have three principal consumptive uses of water. The use requiring the greatest consumptive demand—approximately 750 gpm—will be for injection into the combustion turbines to increase power output (power augmentation). The use of water for power augmentation is expected to be required under short-term conditions to meet peak electric demands. This maximum water consumption rate will only occur when all six combustion turbines are operating at their maximum output. A demand as low as 1 gpm is likely whenever five or fewer combustion turbines are operated. The second highest use of water—an estimated 720 gpm— would occur when burning fuel oil in all six combustion turbines. This situation would occur only when the gas supply was interrupted during periods when the Plant was operating at full load. The third principal consumptive demand—approximately 80 gpm—is for makeup to the combustion turbine inlet air evaporative coolers. Use of water for evaporative air cooling is expected when the ambient air temperature is above 60°F. Under any conditions, use of Dry Low NO_x combustors will minimize water use relative to NO_x control via water injection, a commonly used and economical method to reduce NO_x formation in combustion turbines. (Idzorek Direct at 8, Applicant's Exhibit 34; Applicant's Exhibit 56.)

The uses of raw water described in this Finding will consume the vast majority of water required to operate the facility. These uses do not constitute using water for space heating, ventilating, air conditioning or refrigeration systems.

Energy Efficiency

81. The Project will utilize state-of-the-art simple cycle combustion turbine technology that provides the most energy efficient Plant that can meet the rapid startup requirements of the Project. The efficiency of the Project is substantially greater than existing oil-fired alternatives. Although higher energy efficiencies can be obtained from combined cycle plants, those plants are not appropriate for peaking and/or contingency services. (CON at 4.1; Idzorek Direct at 8, 9, Applicant's Exhibit 34.)

Mitigation of Adverse Environmental Effects

82. The Project incorporates several features to minimize potential adverse environmental effects associated with the construction and operation of the Project. These include design features, specific resource protection measures, construction constraints and controls, and operational programs. (Idzorek Direct at 9-11, Applicant's Exhibit 34.)

For example:

- The low noise levels associated with the Plant are a result of the Plant being built using best available noise control technology, including arrangement of the combustion turbines to minimize the impact of any noise, sizing of air inlet and exhaust outlets to reduce noise, and the innovative use of muffling and sound absorbing materials.
- Planned features to reduce visual impacts include appropriate plantings of trees or other visual screening along major thoroughfares, especially County Road 103, good maintenance of fences and other site boundaries, upkeep of Project entrances and roadways, appropriate signage at the Project entrance, and downward and inward pointing of night time security lighting.
- The potential for soil erosion during construction will be mitigated by the use of Best Management Practices as required by the General Stormwater Permit for construction. These will include: rapid revegetation of disturbed soils that will not be paved or covered, provision of temporary control facilities as needed during construction to manage stormwater runoff, and use of silt fences and/or hay bales and other sediment control devices.
- Soil conditions will be periodically monitored for moisture content to assure that wastewater spray irrigation activities are optimized for agricultural benefit.
- Potential adverse impacts to the City of Trimont or St. James well fields will be prevented by conducting appropriate analysis, possibly including pumping tests prior to well use and by conforming to MDNR regulations in the appropriations permitting process.
- Shallow ground water, if present beneath the Project site, will be periodically monitored to confirm that wastewater spray irrigation activities are not negatively affecting groundwater quality.
- Storm water discharges will be controlled using properly designed conveyance and retention facilities to avoid (a) overloading the existing agricultural drainage system, thereby flooding areas hydraulically upstream of the Plant site and/or (b) flooding downstream areas by reducing times required to convey stormwater to ditches. The Project will employ best management practices for erosion control and will include a sedimentation basin to reduce both construction and post-construction water quality

impacts. (EIA at P, MEQB Exhibit 21; Idzorek Direct at 9-11, Applicant's Exhibit 34.)

Potential Expansion of Generating Capacity

83. No expansion is currently anticipated. The ability of the Project to accommodate an expanded capacity is limited by the existing Lakefield-Wilmarth 345 kV transmission line. The addition of the Project to the existing line is an addition within the capacity of the existing line. Future capacity additions would require modification of the existing line or construction of a new one. (Idzorek Direct at 11, Applicant's Exhibit 34.)

Adverse Human, Natural and Environmental Effects Which Cannot be Avoided as a Result of Construction and Operation of the Plant

84. There are no significant adverse human, natural and environmental effects from the Project at either site. (Idzorek Direct at 11, Applicant's Exhibit 34 at p. 17, 5.11.)

Exclusions Which Must be Avoided Under the Minnesota Rules for Power Plant Siting

85. Neither of the proposed sites involve any of the exclusions identified under Minn. Rule 4400.3310, subps. 2, 3, and 4. Neither of the transmission line interconnection routes involve any of the exclusions identified under Minn. Rule 4400.1310, subp. 2. (Idzorek Direct at 11, Applicant's Exhibit 34.)

I. DIFFERENCES BETWEEN THE PREFERRED AND ALTERNATE SITES

86. The major difference between the two sites is the length of the transmission interconnection. The Alternate Plant Site requires 3 more monopole steel structures and approximately one-half mile of additional transmission line, as compared with the Preferred Plant Site. In addition, the Preferred Plant Site transmission interconnect would not require a road crossing. (Cullison Direct at 11, Applicant's Exhibit 31.)

87. The other major difference is that Preferred Plant Site requires approximately a 1700-foot longer natural gas pipeline interconnection from the existing Northern Border Pipeline than the Alternate Plant Site gas pipeline interconnection. (Pipeline App. at Figs. 1-1 and 1-2.) However, the cost differential is greater for the transmission line (approximately \$250,000) as compared with a smaller cost differential for the pipeline (approximately \$120,000). Moreover, to the extent that the transmission towers have a visual impact, that impact would be greater at the Alternate Plant Site. (Cullison Direct at 11, Applicant's Exhibit 31.)

88. Those items for which the costs differ between the two sites include the length of the gas line interconnect, the length of the transmission line interconnect, the length of the raw water line interconnect, and the length of the access road. The difference in the currently estimated costs between the two sites, taking into account 20

years of differential maintenance costs and differing construction costs, is approximately \$160,000. The principal difference is the cost of the longer transmission line necessary for the Alternate Site. (Cullison Direct at 12, Applicant's Exhibit 31.)

89. Applicant's Exhibits 58 and 59, filed on October 5, 1999, are admitted to the record.

90. The Memorandum from John Lee to Randy Cullison (10/6/99), letter from Robert Witty to Eldon Olson (9/28/99) and letter from Steve La Casse to Randy Cullison (10/5/99), referred to at Findings 52, 71 and 72, respectively, are admitted to the record.

91. The Supplementary Statements of witness Ray Wuolo filed on October 14 and October 21, 1999, respectively, are admitted to the record.

Based on the foregoing Findings of Fact, the Administrative Law Judge makes the following:

CONCLUSIONS

1. Any of the foregoing Findings more properly designated as Conclusions are hereby adopted as such.

2. The Administrative Law Judge and the Minnesota Environmental Quality Board and the have jurisdiction over the subject matter of the hearing pursuant to Minn. Stat. §§ 14.50 and 116C.06.

3. All relevant substantive and procedural requirements of law and rule have been fulfilled prerequisite to the issuance of a Certificate of Site Compatibility to the applicant.

4. The use of water for cooling purposes at the proposed plant will not constitute a "once-through system" for groundwater within the meaning of Minn. Stat. §§ 103G.005, subd. 13a or 103G.271, subd. 5.

5. The sites proposed by the Applicant for the construction of a large electrical power generation plant are acceptable sites under the provisions of Minn. Stat. § 116.57, subd. 4 and Minn. Rule 4400.3310. The Applicant's Preferred Site is preferable to the Alternate Site that was evaluated.

Based upon the foregoing Conclusions, of Law, the Administrative Law Judge makes the following:

RECOMMENDATION

That the MEQB CERTIFY the Applicant's Preferred Site as a compatible site for the construction of the Lakefield Junction 550 megawatt simple-cycle combustion turbine generating plant, also referred to as the Lakefield Junction Generating Station, and issue a Certificate of Site Compatibility for its construction on land owned by Lakefield in the NE ¼ of Section 19, Cedar Township, Martin County, Minnesota, with a portion of the spray irrigation system for waste water disposal to be located in the SW ¼ of Section 20 in Cedar Township, Martin County, Minnesota.

Dated this 29th day of October, 1999

_____/s/ Richard C.
Luis _____
Luis
Administrative Law Judge

Richard C.

Reported: Julie Rixe, Janet Shaddix and Associates
Transcript prepared.

NOTICE

Under Minn. Stat. § 14.62, subd. 1, the agency is required to serve its final decision upon each party and the Administrative Law Judge by first class mail or as otherwise provided by law.

MEMORANDUM

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Cory Ebeling, who operates a hog farm in the quarter-section adjacent to the Preferred Site, expressed a preference at the hearing and in a letter to the Administrative Law Judge for selection of the Alternate Site if a Certificate of Site Compatibility is issued. The proposed plant structure on the Alternate Site would be located at least one-half mile farther from the Ebeling residence and hog operation than it would be on the Preferred Site. The Administrative Law Judge is persuaded that the plant will operate at a relatively low noise level, sufficiently low that the Ebelings (and their animals) will find the noise tolerable at either location. Mr. Ebeling has not presented evidence regarding the extent to which his property value would be diminished by the construction of the plant in either location. Expenses and other issues associated with building an interconnecting power line of greater length to the Alternate Site than that required for the Preferred Site is believed by the Judge to be a concern that outweighs the considerations behind the Ebelings' preference. The Preferred Site involves the shorter power line, and at least three fewer power poles, and these facts are reason enough to choose it over the Alternate Site.

The Administrative Law Judge received approximately 125 essentially identical letters from building and construction trade union organizations (principally the United Association of Steam Fitters-Pipefitters) regarding whether the use of ground water for the power generating station proposed in the Application constitutes a "once-through system" for purposes of obtaining a ground water appropriation permit under Minn. Stat. Chapter 103G. The concern is that if too much ground water is to be appropriated for utilization in such a system, the plant cannot be issued a permit to draw the water and may have to modify its operations or design. The Administrative Law Judge, after reviewing Minn. Stat. §§ 103G.005, subd. 13a and 103G.271, subd. 5, concludes that

the plant operations using ground water do not constitute “space heating, ventilating, air conditioning (HVAC), or refrigeration systems” within the meaning of those statutes. Before being amended in 1990, Chapter 103G defined once-through systems as cooling, heating and refrigeration systems that draw groundwater to remove or add heat for “human comfort”. Under Minn. Laws 1990, ch. 597, §§ 62 and 64, the Legislature eliminated the reference to “human comfort” and added the widely recognized acronym “HVAC”. This change did not alter the purpose of the statute, which is to prevent appropriating too much ground water for the needs of human comfort. The Judge is persuaded that the statute does not apply to water utilized for various combustion turbine processes involved in the production of electric energy, which constitute the uses proposed for the overwhelming majority of ground water to be used. Water utilized for purposes other than combustion turbine processes and functions (service water and water used for fire protection) is also not used for temperature or humidity control or space heating, ventilating, air conditioning or refrigeration. It is noted also that any water left over (most of it will be consumed in plant operations) is to be reused for irrigation purposes.

R.C.L.